LESSON PLAN FOR WINTER SEMESTER(2023-24)

Discipline : 3rd semester (Electrical)
Name of the Faculty: PADMINI PANIGRAHI (Lect. in Mathematics)

Subject: Engg. Mathematics-3	4 therory classes per week	From: 01.08.2023 To:30.11.2023 of Weeks: 16 Total no. periods : 65 theory	No.
Week	**Class Day**	**Theory**	**Range**
1st	1st	**Complex Numbers** 1.1 Real and Imaginary numbers	01.08.2023 TO 05 /08/23
	2nd	1.2 Complex numbers, conjugate complex numbers, Modulus and Amplitude of a complex number	
	3rd	1.3 Geometrical Representation of Complex Numbers.	
2nd	1st	1.4 Properties of Complex Numbers	07.08.2023 TO 12 /08/23
	2nd	1.5 Determination of three cube roots of unity and their properties.	
	3rd	1.6 De Moivre's theorem	
	4th	**Matrices** 2.1. Define rank of a matrix.	
3rd	1st	2.2. Perform elementary row transformations to determine the rank of a matrix.	14.08.2023 TO 19 /08/23
	2nd	2.3. State Rouche's theorem for consistency of a system of linear equations in unknowns.	
	3rd	2.4. Solve equations in three unknowns testing consistency.	
	4th	2.4. Solve equations in three unknowns testing consistency.	
4th	1st	**Linear Differential Equations** 3.1. Define Homogeneous and Non – Homogeneous Linear Differential Equations with constant coefficients with examples	21.08.2023 TO 26 /08/23
	2nd	3.2. Find general solution of linear Differential Equations in terms of C.F. and P.I.	
	3rd	3.2. Find general solution of linear Differential Equations in terms of C.F. and P.I.	
	4th	3.3. Derive rules for finding C.F. And P.I. in terms of operator D	
5th	1st	3.3. Derive rules for finding C.F. And P.I. in terms of operator D	28/08/2023 TO 02 /09/23
	2nd	3.3. Derive rules for finding C.F. And P.I. in terms of operator D	
	3rd	3.4 Define partial differential equation (P.D.E)	
	4th	3.5. Form partial differential equations by eliminating arbitrary constants and arbitrary functions.	

6th	1st	3.6. Solve partial differential equations of the form Pp + Qq = R	04/09/2023 TO 09 /09/23
	2nd	3.6. Solve partial differential equations of the form Pp + Qq = R	
	3rd	**4. Laplace Transforms** 4.1. Define Gamma function	
	4th	4.2. Define Laplace Transform of a function and Inverse Laplace Transform	
7th	1st	4.3. Derive L.T. of standard functions and explain existence conditions of L.T.	11/09/2023 TO 16 /09/23
	2nd	4.3. Derive L.T. of standard functions and explain existence conditions of L.T.	
	3rd	4.4. Explain linear, shifting property of L.T	
	4th	4.4. Explain linear, shifting property of L.T	
8th	1st	4.5. Formulate L.T. of derivatives, integrals, multiplication by t^n and division by t .	18/09/2023 TO 23 /09/23
	2nd	4.5. Formulate L.T. of derivatives, integrals, multiplication by t^n and division by t .	
	3rd	4.6. Derive formulae of inverse L.T. and explain method of partial fractions	
	4th	4.6. Derive formulae of inverse L.T. and explain method of partial fractions with problems	
9th	1st	4.6. Derive formulae of inverse L.T. and explain method of partial fractions with problems	25/09/2023 TO 30 /09/23
	2nd	4.6. Derive formulae of inverse L.T. and explain method of partial fractions with problems	
	3rd	**5. Fourier Series** 5.1. Define periodic functions.	
	4th	5.1. Define periodic functions.	
10th	1st	5.2. State Dirichlet's condition for the Fourier expansion of a function and it's convergence	02/10/2023 TO 07/10/23
	2nd	5.2. State Dirichlet's condition for the Fourier expansion of a function and it's convergence	
	3rd	5.2. State Dirichlet's condition for the Fourier expansion of a function and it's convergence	
	4th	5.3. Express periodic function f(x) satisfying Dirichlet's conditions as a Fourier series	
11th	1st	5.3. Express periodic function f(x) satisfying Dirichlet's conditions as a Fourier series	09/10/2023 TO 14/10/23
	2nd	5.4. State Euler's formulae	
	3rd	5.5. Define Even and Odd functions and find Fourier Series	
	4th	5.5. Define Even and Odd functions and find Fourier Series	

12th	1st	Obtain F.S of continuous functions and functions having points of discontinuity		16/10/2023 TO 20/10/23
	2nd	Obtain F.S of continuous functions and functions having points of discontinuity		
	3rd	**6. Numerical Methods** 6.1. Appraise limitation of analytical methods of solution of Algebraic Equations		
	4th	6.2. Derive Iterative formula for finding the solutions of Algebraic Equations by : 6.2.1. Bisection method		
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13th	1st	6.2.2. Newton- Raphson method		30/10/2023 TO 04/11/23
	2nd	Bisection method & Newton- Raphson method		
	3rd	**7. Finite difference and interpolation** 7.1. Explain finite difference and form table of forward and backward difference		
	4th	7.2. Define shift Operator and establish relation between & difference operator .		
14th	1st	7.3. Derive Newton's forward and backward interpolation formula for equal intervals.		06/11/2023 TO 11/11/23
	2nd	7.3. Derive Newton's forward and backward interpolation formula for equal intervals.		
	3rd	7.4. State Lagrange's interpretation formula for unequal intervals.		
	4th	7.4. State Lagrange's interpretation formula for unequal intervals.		
15th	1st	7.5 Explain numerical integration and state: 7.5.1. Newton's Cote's formula.		13/11/2023 TO 18/11/23
	2nd	7.5 Explain numerical integration and state: 7.5.1. Newton's Cote's formula.		
	3rd	7.5.2. Trapezoidal rule.		
	4th	7.5.3. Simpson's 1/3rd rule		
16th	1st	7.5.2. Trapezoidal rule.		20/11/2023 TO 25/11/23
	2nd	7.5.3. Simpson's 1/3rd rule		
	3rd	revision		
	4th	revision		
17th	1st	revision		28/11/23 TO 30/11/23
	2nd	revision		

Padmini
01/08/23
SUBJECT
TEACHER

ACADEMIC CO-ORDINATOR

01/08/2023
H.O.D
(ELECTRICAL BRANCH)

PRINCIPAL
01/8/23